AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions and listings of claims in the application:

LISTING OF CLAIMS:

1. (currently amended): A rubber composition using a modified conjugated diene polymer, characterized by comprising (A) 100 parts by mass of a rubber component containing not less than 10% by mass of a conjugated diene polymer having a polymer chain with at least one functional group selected from the group consisting of a substituted amino group represented by the following formula (I):

$$R_1$$
 N
 R_1

(wherein R_1 is independently an alkyl, cycloalkyl or aralkyl group having a carbon number of 1-12),

and a cyclic amino group represented by the following formula (II):

$$R_2$$
 \cdots [II]

(wherein R₂ is an alkylene group having 3-16 methylene groups, a substituted alkylene group or an oxy- or N-alkylamino-alkylene group),

wherein the conjugated diene polymer is formed by forming a solution of one or more anion-polymerizable monomers consisting essentially of 1,3-butadiene in a hydrocarbon solvent,

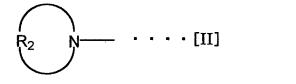
Application No.: 10/550,554

Attorney Docket No.: Q90435

and then polymerizing the monomers with (D) a lithioamine represented by a general formula of (AM)Li(Q)_y, wherein y is 0 or 0.5 to 3, and Q is a soluble component selected from the group consisting of a hydrocarbon, an ether, an amine and a mixture thereof, and AM is the formula (I):

wherein R_1 is the same as mentioned above,

or the formula (II):



wherein R_2 is the same as mentioned above;

or a mixture of the item (D) and (E) an organic alkali metal compound selected from compounds represented by general formulae of R₄M, R₅OM, R₆C(O)OM, R₇R₈NM and R₉SO₃M, wherein each of R₄, R₅, R₆, R₇, R₈ and R₉ is selected from the group consisting of alkyl, cycloalkyl, alkenyl and aryl groups having a carbon number of about 1 to about 12 and phenyl group and M is selected from the group consisting of Na, K, Rb and Cs, as a polymerization initiator in the presence of at least one selected from the group consisting of a hydrocarbon, an ether, an amine and a chelating agent;

- (B) not less than 20 parts by mass of carbon black; and
- (C) not more than 1.0 part by mass of a polycyclic aromatic compound (PCA).

AMENDMENT UNDER 37 C.F.R. § 1.116 Attorney Docket No.: Q90435

Application No.: 10/550,554

2. (original): A rubber composition according to claim 1, wherein the conjugated

diene polymer is a copolymer of butadiene and an aromatic vinyl compound or a homopolymer

of butadiene.

3. (original): A rubber composition according to claim 2, wherein a vinyl bond

content in butadiene portion is not more than 25%.

4. (previously presented): A rubber composition according to claim 2, wherein a

content of the aromatic vinyl compound as a copolymer component is not more than 10% by

mass.

5. (previously presented): A rubber composition according to claim 2, wherein the

aromatic vinyl compound as a copolymer component is styrene.

6. (previously presented): A rubber composition according to claim 2, wherein the

conjugated diene polymer is polybutadiene.

7. (previously presented): A rubber composition according to claim 1, wherein the

conjugated diene polymer has a glass transition temperature (Tg) of not higher than -50°C.

8. (previously presented): A rubber composition according to claim 1, wherein R₁ in

the formula (I) is methyl group, ethyl group, butyl group, octyl group, cyclohexyl group,

3-phenyl-1-propyl group or isobutyl group.

4

Application No.: 10/550,554

ER 37 C.F.R. § 1.116 Attorney Docket No.: Q90435

9. (previously presented): A rubber composition according to claim 1, wherein R₂ in

the formula (II) is tetramethylene group, hexamethylene group, oxydiethylene group,

N-alkylazadiethylene group, dodecamethylene group or hexadecamethylene group.

10. (canceled).

11. (currently amended): A rubber composition according to claim 1, wherein the

conjugated diene polymer has at least one tin-carbon bond or silicon-carbon bond derived from a

coupling agent of a formula: (R₃)_aZX_b, (wherein Z is tin or silicon, and R₃ is selected from the

group consisting of an alkyl group having a carbon number of 1-20, a cycloalkyl group having a

carbon number of 3-20, an aryl group having a carbon number of 6-20 and an aralkyl group

having a carbon number of 7-20, and a is 0 to 3, b is 1 to 4 and a+b=4).

12. (previously presented): A rubber composition according to claim 1, wherein not

less than 20% by mass of natural rubber and/or polyisoprene rubber is included in 100 parts by

mass of the rubber component containing the conjugated diene polymer.

13. (previously presented): A rubber composition according to claim 1, wherein

carbon black as the component (B) has a nitrogen adsorption specific surface area (N₂SA) of not

less than 70 m²/g.

5

AMENDMENT UNDER 37 C.F.R. § 1.116 Attorney Docket No.: Q90435

Application No.: 10/550,554

14. (previously presented): A rubber composition according to claim 1, wherein PCA as the component (C) is derived from a softening agent.

15. (previously presented): A rubber composition according to claim 1, wherein an

extractable of the rubber composition after vulcanization with acetone-chloroform is not more

than 20% by mass per the mass of the rubber composition after vulcanization.

16. (previously presented): A tire characterized by using a rubber composition as

claimed in claim 1.

17. (original): A tire according to claim 16, wherein the rubber composition is

applied to a tread.

18. (previously presented): A tire according to claim 16, wherein the tire is a heavy

duty tire.

19. (currently amended): A rubber composition according to claim 140, wherein a

chelating agent is added to the mixture of the items (D) and (E) during the production of the

modified conjugated diene polymer.

20. (new): A rubber composition according to claim 19, wherein the chelating agent

is selected from the group consisting of tetramethylene ethylene diamine (TMEDA), oxolanyl

cyclic acetals and cyclic oligomer-like oxolanyl alkanes.

6

Application No.: 10/550,554

Attorney Docket No.: Q90435

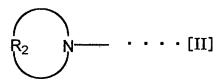
21. (new): A rubber composition using a modified conjugated diene polymer, characterized by comprising:

(A) 100 parts by mass of a rubber component containing not less than 10% by mass of a conjugated diene polymer having a polymer chain with at least one functional group selected from the group consisting of a substituted amino group represented by the following formula (I):

$$R_1$$
 N \cdots $[I]$

wherein R_1 is independently an alkyl, cycloalkyl or aralkyl group having a carbon number of 1-12,

and a cyclic amino group represented by the following formula (II):



wherein R_2 is an alkylene group having 3-16 methylene groups, a substituted alkylene group or an oxy- or N-alkylene group,

wherein the conjugated diene polymer has a vinyl bond content of not less than 14%;

- (B) not less than 20 parts by mass of carbon black; and
- (C) not more than 1.0 part by mass of a polycyclic aromatic compound (PCA).

AMENDMENT UNDER 37 C.F.R. § 1.116 Attorney Docket No.: Q90435

Application No.: 10/550,554

22. (new): A rubber composition according to claim 21, wherein the conjugated diene polymer is a copolymer of butadiene and an aromatic vinyl compound or a homopolymer of butadiene.

- 23. (new): A rubber composition according to claim 22, wherein a vinyl bond content in butadiene portion is not more than 25%.
- 24. (new): A rubber composition according to claim 22, wherein a content of the aromatic vinyl compound as a copolymer component is not more than 10% by mass.
- 25. (new): A rubber composition according to claim 22, wherein the aromatic vinyl compound as a copolymer component is styrene.
- 26. (new): A rubber composition according to claim 22, wherein the conjugated diene polymer is polybutadiene.
- 27. (new): A rubber composition according to claim 21, wherein the conjugated diene polymer has a glass transition temperature (Tg) of not higher than -50°C.
- 28. (new): A rubber composition according to claim 21, wherein R₁ in the formula (I) is methyl group, ethyl group, butyl group, octyl group, cyclohexyl group, 3-phenyl-l-propyl group or isobutyl group.

Application No.: 10/550,554

29. (new): A rubber composition according to claim 21, wherein R_2 in the formula (II) is tetramethylene group, hexamethylene group, oxydiethylene group, N-alkylazadiethylene group, dodecamethylene group or hexadecamethylene group.

Attorney Docket No.: Q90435

- 30. (new): A rubber composition according to claim 21, wherein the conjugated diene polymer has at least one tin-carbon bond or silicon-carbon bond derived from a coupling agent of a formula: $(R_3)_a Z X_b$, wherein Z is tin or silicon, and R_3 is selected from the group consisting of an alkyl group having a carbon number of 1-20, a cycloalkyl group having a carbon number of 3-20, an aryl group having a carbon number of 6-20 and an aralkyl group having a carbon number of 7-20, and a is 0 to 3, b is 1 to 4 and a+b = 4.
- 31. (new): A rubber composition according to claim 21, wherein not less than 20% by mass of natural rubber and/or polyisoprene rubber is included in 100 parts by mass of the rubber component containing the conjugated diene polymer.
- 32. (new): A rubber composition according to claim 21, wherein carbon black as the component (B) has a nitrogen adsorption specific surface area (N₂SA) of not less than 70 m²/g.
- 33. (new): A rubber composition according to claim 21, wherein PCA as the component (C) is derived from a softening agent.

Application No.: 10/550,554

Attorney Docket No.: Q90435

34. (new): A rubber composition according to claim 21, wherein an extractable of the rubber composition after vulcanization with acetone-chloroform is not more than 20% by mass per the mass of the rubber composition after vulcanization.

- 35. (new): A tire characterized by using a rubber composition as claimed in claim 21.
- 36. (new): A tire according to claim 35, wherein the rubber composition is applied to a tread.
 - 37. (new): A tire according to claim 35, wherein the tire is a heavy duty tire.